

Application Serial No: 10/730,194
In reply to Office Action of 9 March 2005

Attorney Docket No. 84280

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1. (cancelled)
2. (cancelled)
3. (currently amended) ~~The method in accordance with claim 2~~ A frequency domain method to estimate a real and imaginary dilatational wavespeed of a material, said method comprising the further step steps of:

providing a specimen of the material;

providing a source of acoustic waves at a zero wavenumber;

positioning said specimen at a distance from said source
such that said acoustic waves conform to plane waves;

exciting said specimen with said acoustic waves for at
least two nonzero wavenumbers;

Application Serial No: 10/730,194
In reply to Office Action of 9 March 2005

Attorney Docket No. 84280

measuring frequency domain transfer function data

subsequent said excitation of said specimen for at
least two nonzero wavenumbers;

calculating said frequency domain transfer function data to
closed form subsequent to said measuring step of said
specimen for said excitation for at least two nonzero
wavenumbers;

determining the real and imaginary dilatational wavespeed
of said specimen from said calculated frequency domain
transfer function data;

determining an estimated real and imaginary shear wavespeed
of the material from said frequency domain transfer
function data calculated to closed form subsequent to
said measuring step of said specimen for said
excitation for at least two nonzero wavenumbers; and

obtaining a real and imaginary shear modulus using a grid
method of the material from said real and imaginary
determined shear wavespeed.

Application Serial No: 10/730,194
In reply to Office Action of 9 March 2005

Attorney Docket No. 84280

4. (original) The method in accordance with claim 3, said method comprising the further step of determining a real and imaginary Young's modulus of the material from said obtained shear modulus.

5. (original) The method in accordance with claim 4, said method comprising the further step of obtaining an estimated Poisson's ratio of the material from said determined Young's modulus and said obtained shear modulus.